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(54) **QUILTED FABRIC TOWEL STEAM POCKET FOR A STEAM APPLIANCE**

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(52) **U.S. Cl.**

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(58) **Field of Classification Search**

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See application file for complete search history.

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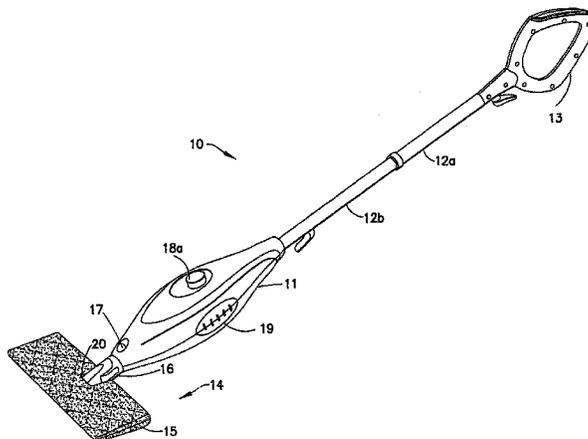
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(57)

**ABSTRACT**

A fabric steam towel for mounting onto a steam frame of a steam appliance is provided. The pocket includes two complimentary substantially planar layers of fabric joined at their peripheral edge with an open section for mounting onto the steam frame and allowing the open edges to butt against each other. The fabrics are constructed of an outer terry layer and inner material with an upper jersey layer, padding and a lower mesh layer with a 45 degree quilting pattern to improve performance. The fabric is sealed about the frame a first length of a fastener is secured to the inside face along the open edge of one layer with a complimentary length of fastener secured to the inside face of the second layer and extending beyond the edge to allow the open edges of each layer to abut each other and for the fasteners to engage and secure the fabric pocket about the edge of the frame.

**15 Claims, 12 Drawing Sheets**



**Related U.S. Application Data**

- continuation of application No. 12/467,057, filed on May 15, 2009, now Pat. No. 7,996,948.
- (60) Provisional application No. 61/172,523, filed on Apr. 24, 2009.
- (51) **Int. Cl.**  
*A47L 13/22* (2006.01)  
*A47L 13/256* (2006.01)

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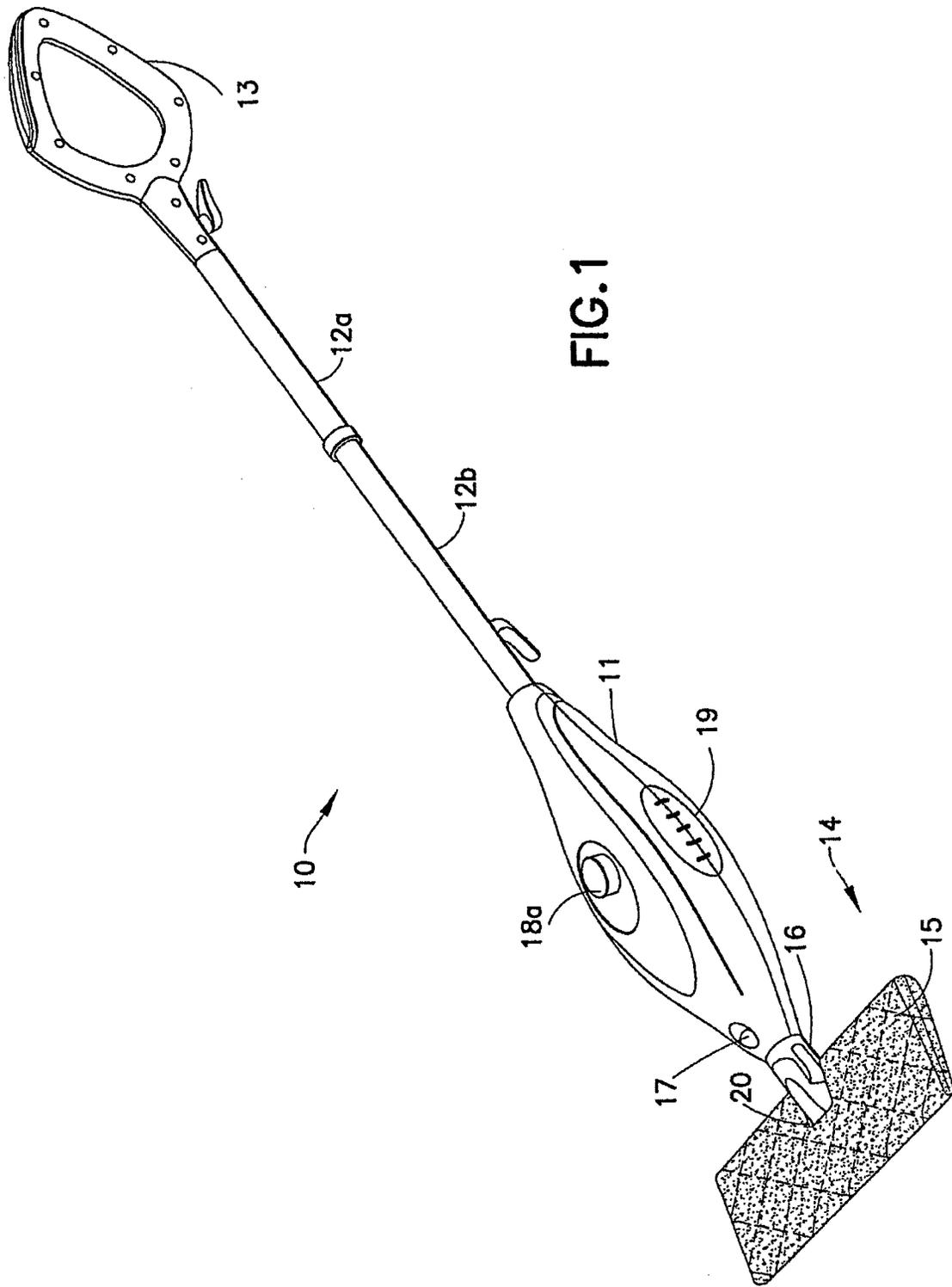


FIG. 1

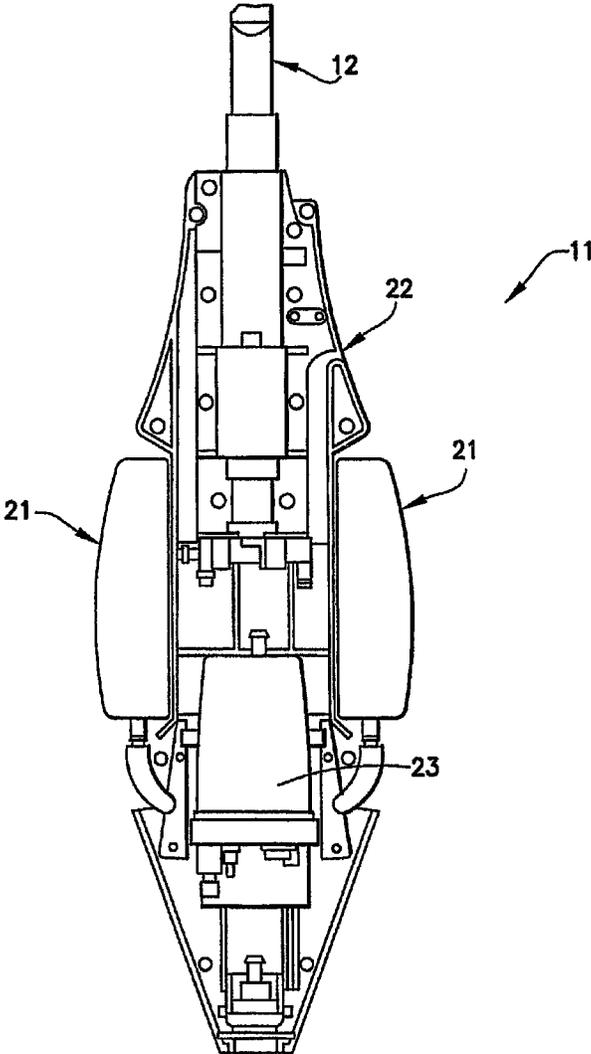


FIG.2

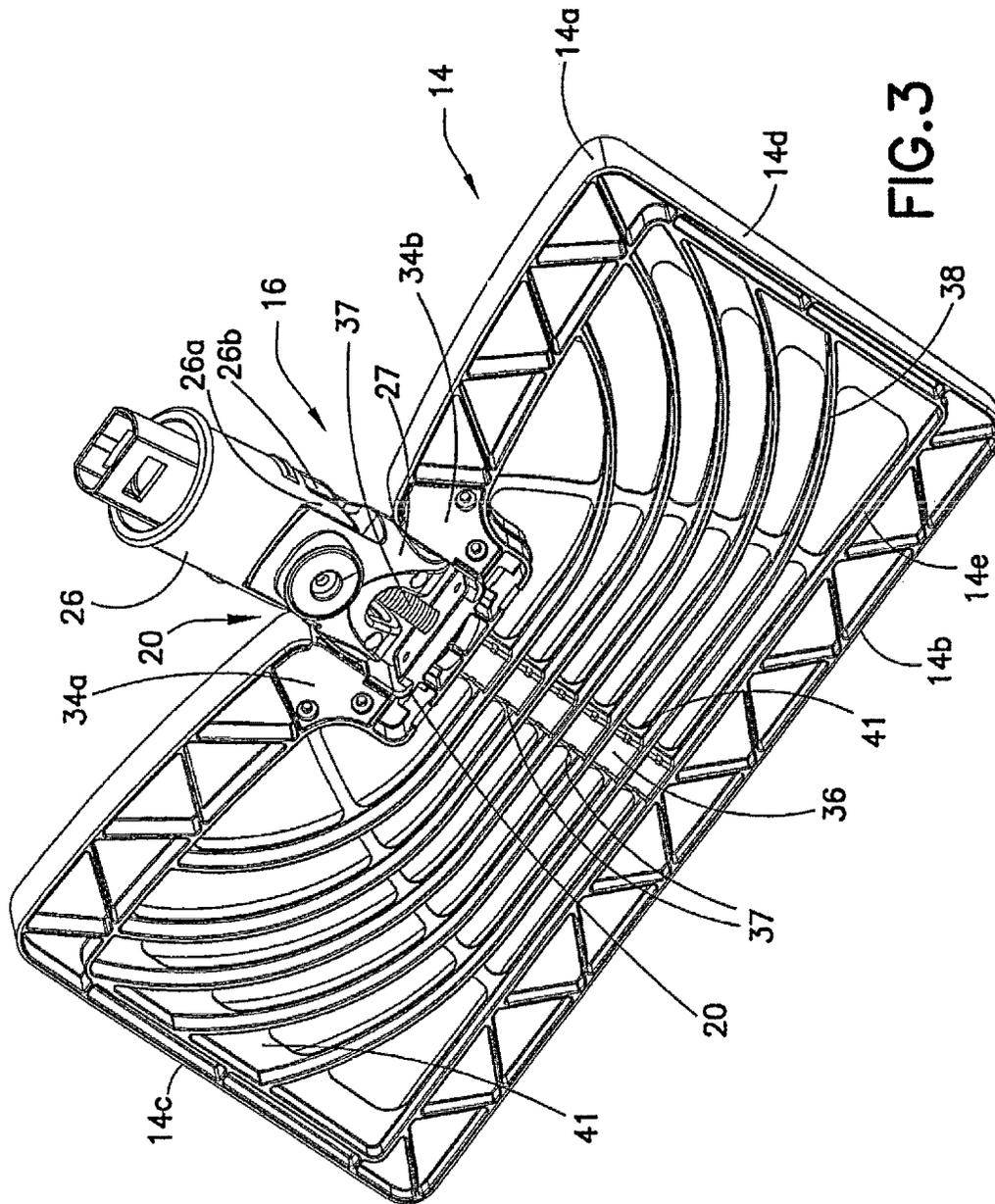


FIG. 3

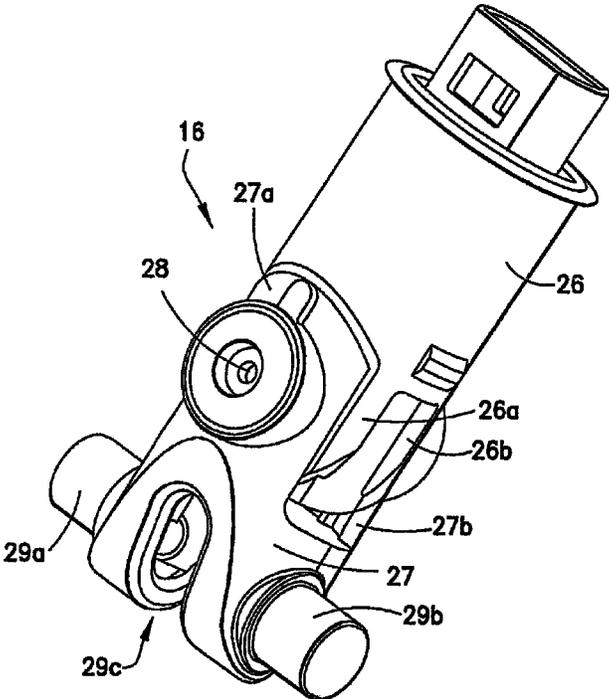


FIG. 4

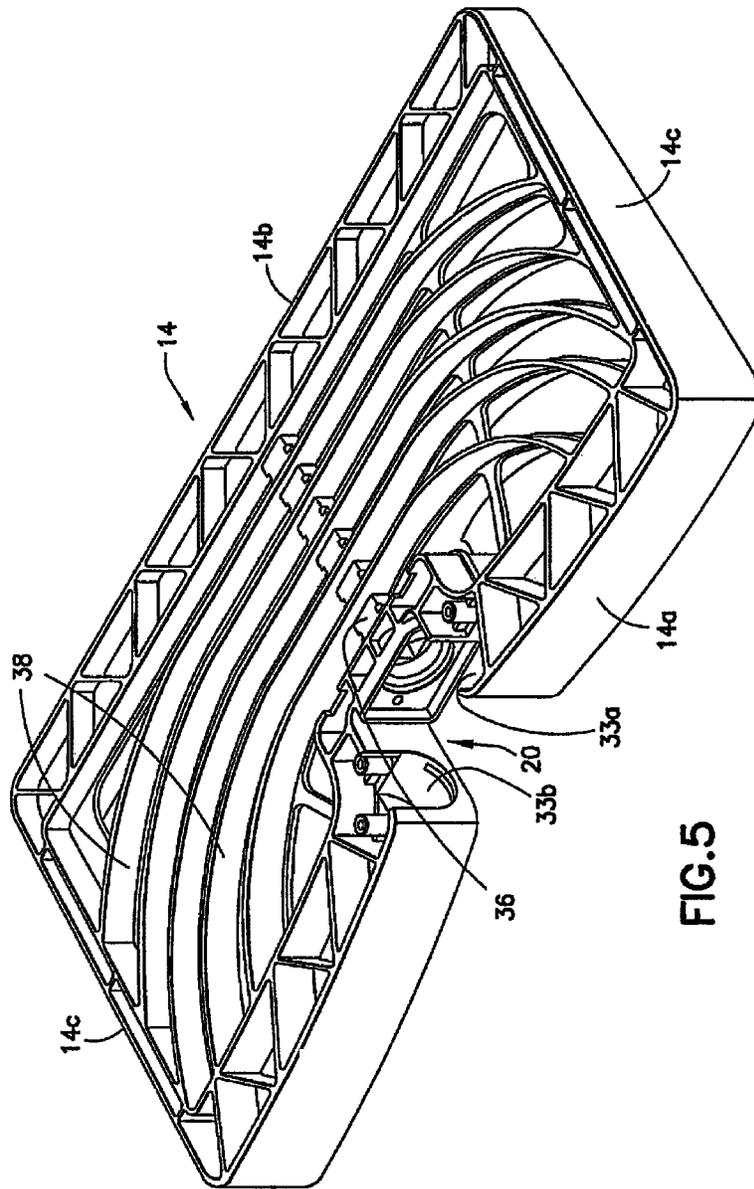


FIG. 5

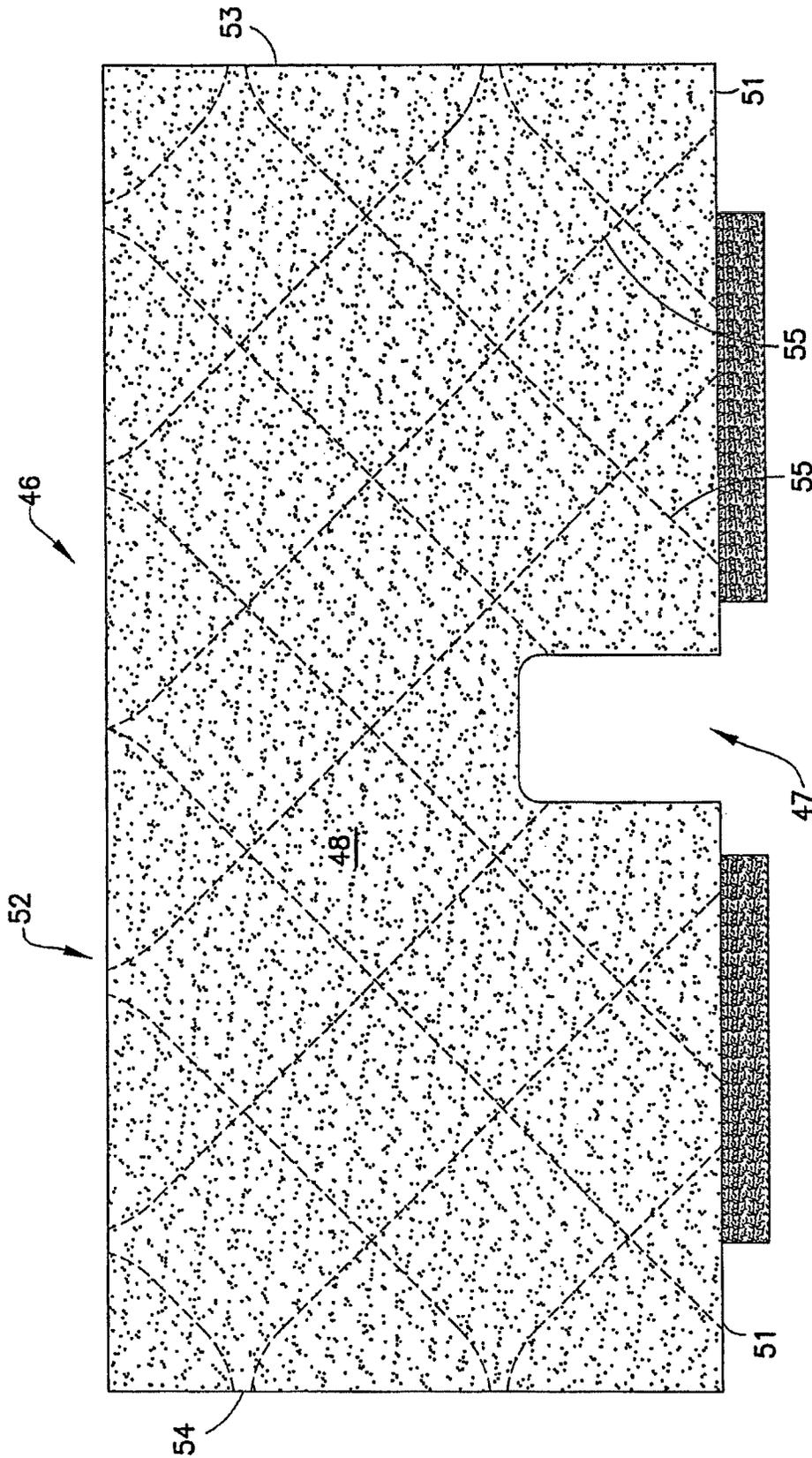


FIG. 6

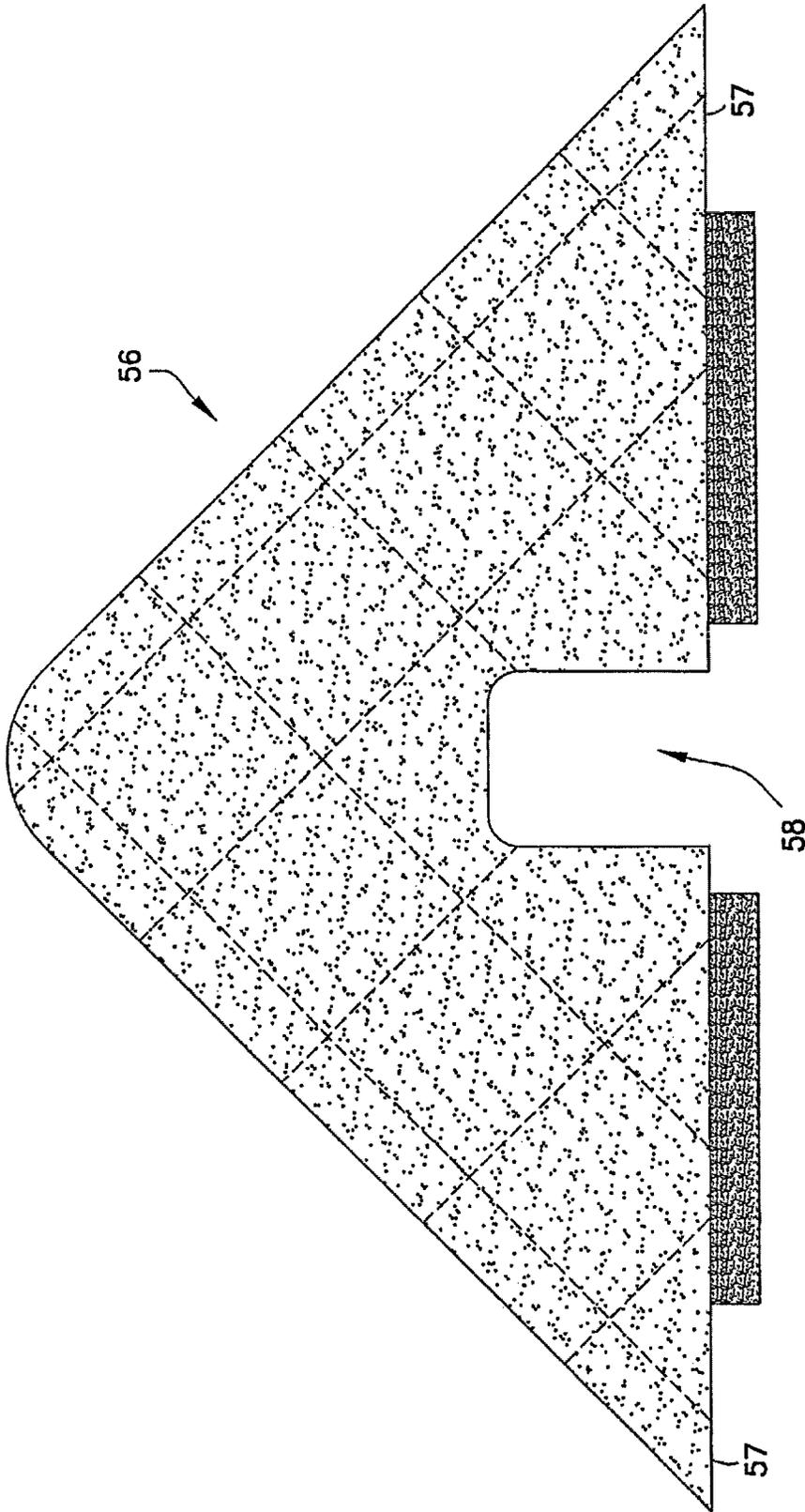


FIG. 7

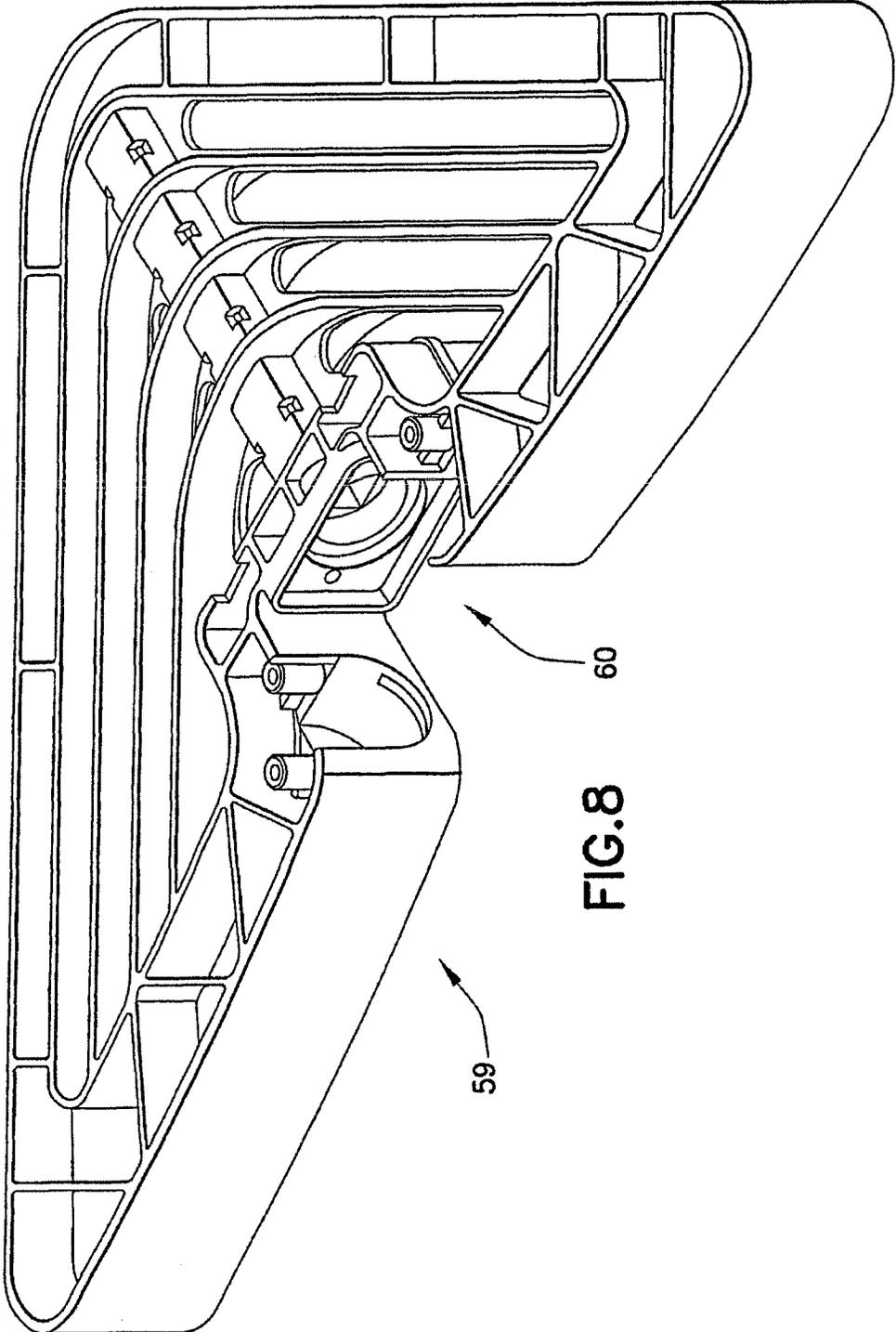


FIG.8

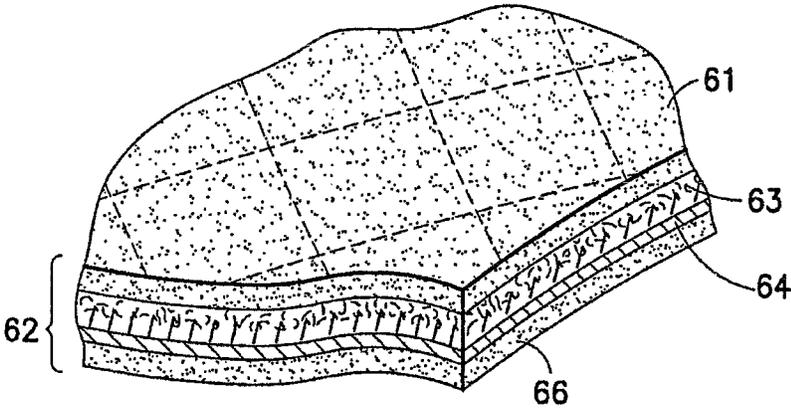


FIG.9

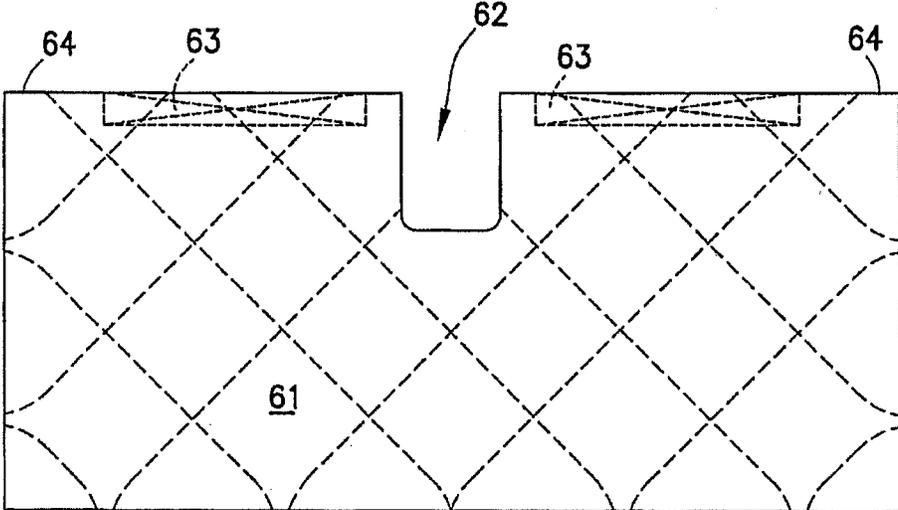


FIG. 10a

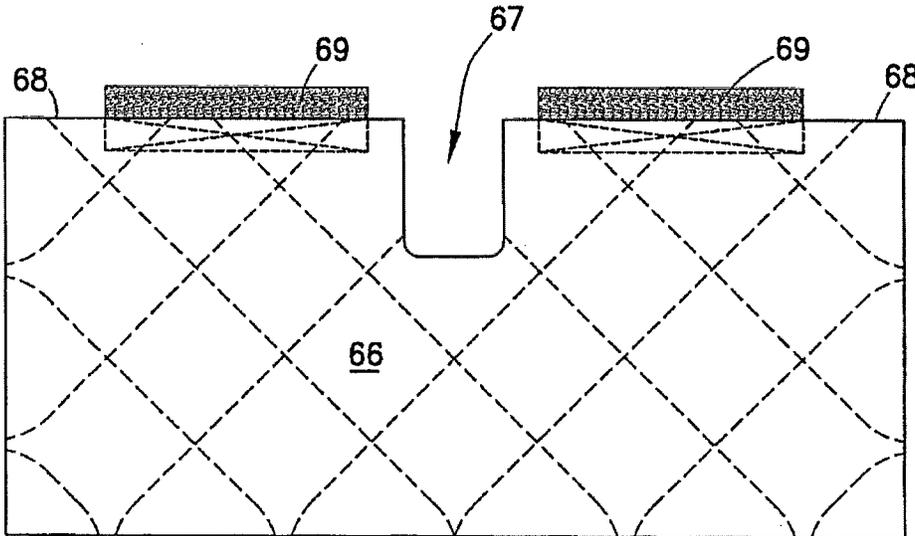
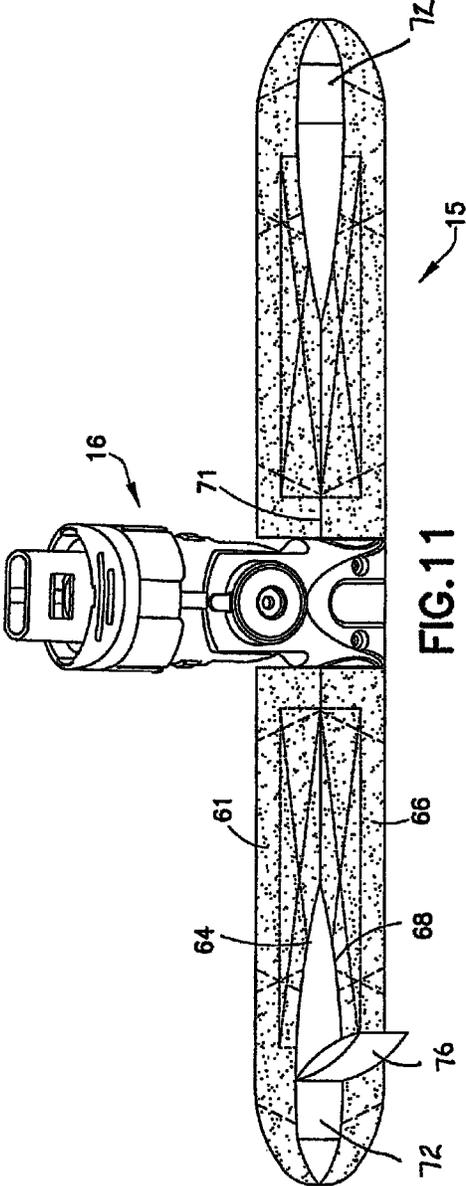


FIG. 10b



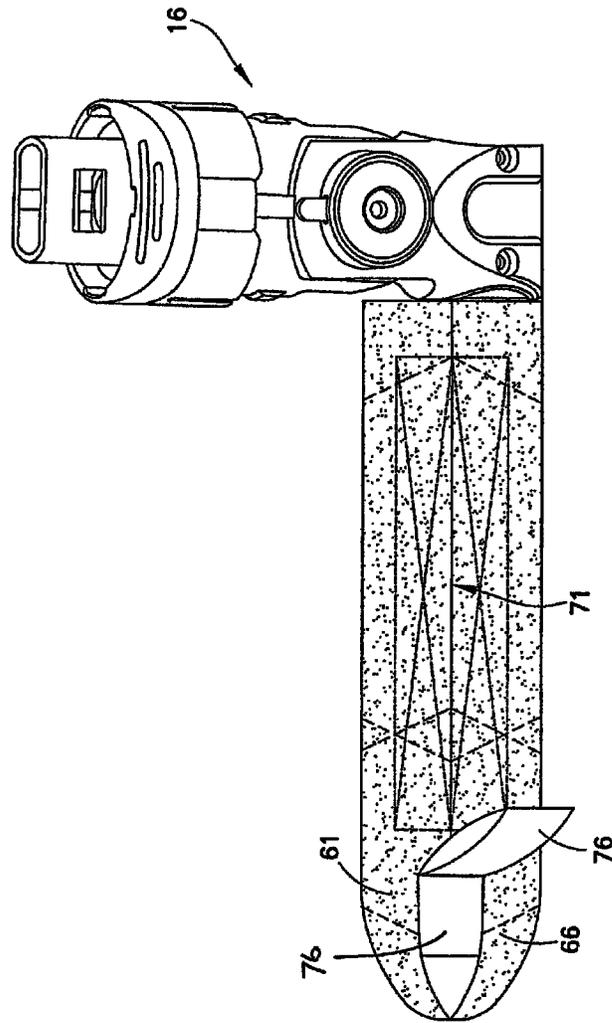


FIG.12

## QUILTED FABRIC TOWEL STEAM POCKET FOR A STEAM APPLIANCE

### CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. application Ser. No. 13/674,166 entitled "Quilted Fabric Towel Steam Pocket for a Steam Appliance", filed Nov. 12, 2012, now published as U.S. Patent Application Publication No. US 2013/0160228, which is a continuation of U.S. application Ser. No. 13/210,175 entitled "Quilted Fabric Towel Steam Pocket for a Steam Appliance", filed Aug. 15, 2011, now granted as U.S. Pat. No. 8,332,987, which is a continuation of U.S. application Ser. No. 12/467,057, entitled "Quilted Fabric Towel Steam Pocket for a Steam Appliance", filed May 15, 2009, which is now granted as U.S. Pat. No. 7,996,948, and which claims the benefit under 35 U.S.C. §119(e) of provisional Application No. 61/172,523 filed Apr. 24, 2009, entitled "Fabric Towel Pocket for a Steam Appliance", each of which is herein incorporated by reference in its entirety.

### BACKGROUND OF THE INVENTION

The invention relates generally to a fabric pocket for a steam appliance, and more particularly to a quilted fabric towel in the form of an envelope to form a steam pocket when installed on a steam frame of a steam appliance.

Steam cleaners and/or devices used to apply steam to household objects are well known. The uses of the devices vary widely, and may include the application of steam to drapes or other fabrics to ease wrinkles, and the application of steam to objects to assist in cleaning the objects. Steam cleaners also have been used for cleaning carpeted floors, but usually overly saturate the carpet and require long period of time to dry.

Typical steam devices have a reservoir for storing water that is connected to an electrical water pump with an on/off switch. The exit from the electric water pump is connected to a steam boiler with a heating element to heat the water. The heated water generates steam, which may be directed towards its intended destination through a nozzle which controls the application of the steam. Variation of the shape and size of the nozzle allows for preferred distribution of generated steam to an object to be cleaned. The nozzles may be disconnectable from the steam generator to allow different nozzles to be utilized, based on the object to be steamed. The nozzle may be either closely coupled to the steam generator, or located at a distance from the steam generator, requiring tubing or other steam transfer structures to be interconnected between the steam generator and the discharge nozzle. Typically, it is beneficial to provide suitable connectors between the steam generator and the nozzle to allow either the nozzle to be connected to the steam generator, or to allow the interpositioning of transfer tubes or hoses between the steam generator and the nozzle.

In general, the nozzles used with the steam cleaners do not have large surface areas. A cloth or towel is placed on a steam frame coupled to the steam nozzle to distribute the steam.

Notwithstanding the wide variety of steam generating appliances and cleaning towels available, there exists the need to provide improved accessories for use with a steam cleaner.

### SUMMARY OF THE INVENTION

Generally speaking, in accordance with the invention, a quilted fabric in the form of an envelope with one open edge

for mounting onto a steam frame of a steam generating device to form a steam pocket is provided. The quilted fabric towel has improved steam distribution properties. The fabric layers of the steam pocket have a terry outer layer and an inner knit fabric lining material that includes a base mesh layer, a padding layer and a jersey layer facing the outer terry layer. The surface of the towel is diagonally quilted from the open edge at 45 degrees to the closed front in geometric pattern with quilt lines crossing at 90 degrees. A slot along the open back edge is provided to accommodate a connection to the appliance and allow for unlimited steering of the steam pocket and use of both sides of the towel for cleaning.

The fabric envelope is formed from two substantially planar layers of fabric configured to fit over a steam frame with fasteners to lock the pocket closed about the frame. The surface layers are joined around their perimeter along the sides and leaving an open edge for mounting onto the steam frame. A pair of fastening strips are secured to the inner side of one layer along the open edge and on the outer side of the other layer with one set of strips extending beyond the edge. When placed on the frame and secured the fabric edges of both layers are butting each other along a closure line. This locks the steam pocket closed to prevent the escape of steam out the open edge of the fabric envelope. In another embodiment, the fabric may include a pull ribbon for assisting installation on to the frame.

Accordingly, it is an object of the invention to provide an improved fabric steam towel to form a steam pocket in a steam appliance.

Another object of the invention is to provide a steam towel for a steam appliance with improved cleaning performance.

Yet another object of the invention is to provide a fabric towel with a closure to lock the pocket closed in the back of the steam frame for improved steaming.

A further object of the invention is to provide a steam towel for a steam appliance with improved push/pull performance. Yet another object of the invention is to provide a steam towel for a steam appliance having improved durability.

Still other objects and advantages of the invention will in part be obvious and will in part be apparent from the specification.

The invention accordingly comprises a product possessing the features, properties, and the relation of components which will be exemplified in the product hereinafter described, and the scope of the invention will be indicated in the claims.

### BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the invention, reference is made to the following description taken in connection with the accompanying drawing(s), in which:

FIG. 1 is a perspective view of a steam mop including a steam pocket constructed and arranged in accordance with the invention;

FIG. 2 is a front view of the mop housing in section showing a reservoir, a pump and a boiler in the mop of FIG. 1;

FIG. 3 is a perspective view of the steam mop frame and universal connector in the steam mop of FIG. 1;

FIG. 4 is a perspective view of the universal connector for connecting the steam frame to the appliance housing as shown in FIG. 1;

FIG. 5 is a rear perspective view of the steam frame showing the details of the steam frame of FIG. 3;

FIG. 6 is a plan view of a rectangular quilted fabric steam towel suitable constructed and arranged in accordance with the invention for use with the steam appliance of FIG. 1;

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FIG. 7 is a plan view of a triangular quilted fabric steam towel in accordance with the invention that may be used with a triangular shaped steam frame and connector for the mop of FIG. 1;

FIG. 8 is a rear perspective view of a triangular steam frame showing for use with the quilted fabric steam towel of FIG. 7;

FIG. 9 is a schematic in section showing the terry and lining layers of the fabric towel in accordance with the invention;

FIGS. 10a and 10b are schematics showing the position of hook and loop fasteners on the top and bottom layers of the steam towel in accordance with the invention; and

FIG. 11 is a rear elevation schematic view of the towel closure constructed and arranged in accordance with the invention; and

FIG. 12 is a partial rear elevational view of the installed steam towel with a pull ribbon on a steam frame in accordance with the invention.

#### DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 is a perspective view of a steam mop 10 constructed and arranged in accordance with the invention. Mop 10 includes an elongated housing 11 with a water reservoir 21 and a boiler 23 shown in FIG. 2 and an upper tube 12a and a lower tube 12b connected to one end of housing 11. A handle 13 is attached to the end of upper tube 12a. A steam frame 14 with a receiving slot 20 with an installed steam pocket 15 is operatively connected to the other end of housing 11 by a connector 16. In this embodiment, connector 16 and frame 14 may be removed from housing 11 by pressing a release button 17 at the base of housing 11. Water is introduced into a reservoir 21 at a water inlet or opening 18a. The level of water present in a reservoir 21 in housing 11 can be viewed through a sighting window 19. The specifics of fabric steam pocket 15 will be described below.

FIG. 2 is a front plan view in section showing the location of elements in housing 11. Water container 21 is positioned adjacent and surrounds boiler 23. A one-way pump 22 pumps water from reservoir 21 to boiler 23 in response to the push-pull movement of mop 10. This movement of handle 13 activates operation of pump 22 and one way inlet and outlet valves.

FIGS. 3-5 show the details of construction of universal connector 16 and steam frame 14 used with steam mop 10 of FIG. 1. Frame 14 is substantially rectangular in shape, open at the top and bottom with plurality of baffles as will be described in detail below.

Universal connector 16 includes an upper connection piece 26 with pivot plates 26a and 26b and a lower connection piece 27 with two pivot arms 27a and 27b coupled at a pivot pins 28 on upper piece 22 that allows steam frame 14 and housing 11 to pivot side to side.

Lower connection piece also includes two side arms 29a and 29b with a central opening 29c for passage of a flexible steam hose 32 to feed steam to frame 14. Frame 14 includes connector receiving slot bushings 33a and 33b for receiving side arms 29a and 29b. Two mounting plates 34a and 34b secure arms 29a and 29b in place to allow for up and down pivoting of arms 29a and 29b. This configuration allows for both sides of frame 14 and steam towel 15 to be used for steaming a surface to be cleaned and for unlimited steering of the steam pocket during use.

As shown in FIGS. 3 and 5 steam frame 14 includes a rear wall 14a with connector receiving opening 20 in the center, a front wall 14b and a right side wall 14c and a left side wall 14d. A plurality of baffles 38 extend within the walls of frame 14. Frame 14 also includes a central steam passageway or

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manifold 36 that runs from the rear of frame 14 at a receiving slot 20 to a front border 14e. A plurality of steam release openings 37 are formed on both sides of manifold 36 along the top and bottom thereof. These release openings 37 are positioned between each baffle 38. Baffles 38 are substantially orthogonal to manifold 33 in the center of frame 14 and extend sideways and curve rearward to the side edges and rear wall of frame 14.

Steam hose 32 is connected to manifold 36 at a hose plate 39 mounted at the entrance to manifold 36. Short fins 41 extend from the sides of manifold 36 and edges 14c and 14d approximately at the mid-height of manifold 36 and side walls 14c and 14d to assist in distribution of steam to the upper and lower surfaces of steam towel 15 installed on frame 14 to form the steam pocket when in use.

Universal connector 16 provides many advantages for ease of use because it easily connect and disconnect to mop frame while providing a user with universal pivoting and steering capability. The user has more control of the appliance and frame by the universal connection to clean whatever areas that need to be clean and allows use of both sides of steam frame 14 for cleaning. In addition, the universal connector may be attached to any variety of differently shaped mop frames, such as rectangular frame 14 or a triangular frame shown in FIG. 7a for use with towel as shown in FIG. 7.

FIG. 6 shows a rectangular towel envelope 46 with a "U" shaped slot 47 and is configured to slip over frame 14 to form a steam pocket 15. Steam towel 46 is formed of a first quilted fabric layer 48 and an opposed second quilted fabric 49. Quilted fabric 48 and 49 each have a substantially rectangular shape with a rear edge 51 in sections about slot 47, a front edge 52 and two short edges 53 and 54. The steam pocket formed by frame 14 and towel 46 is joined at edges 54, 52 and 53 by stitching to form fabric steam towel 15. As shown in FIG. 7 a steam pocket fabric 56 may be triangular in shape or any shape with an open rear mounting edge 57 about a gap 58 for mounting over a steam frame 59 as shown in FIG. 8. Triangular frame 59 includes a slot 60 for receiving connector 16 as described in detail above in connection with frame 14.

Steam pocket fabric envelopes 15, 46 and 56 are open at rear edges 15a, 51 and 57. The fabric along the opening may be closed with a hook and loop fastener, buttons or snaps. Here, steam towels 15 and 46 have slots 20, 47 and 57 to fit around the width of connector 16. This allows for vertical rotation of housing 11 without bending the fabric of fabric steam towel 15. It also allows use of both sides of steam towel 15, 46 and 56 for cleaning without having to remove and re-install the steam towel 15.

As shown, the steam pocket fabrics are quilted in accordance with the invention. In the illustrated embodiments quilting stitches 55 extends from rear edges 15a, 51 and 57 at a 45 degree angle in two directions to the opposed fabric edges forming 2" squares. The size of the squares may vary from about 1" to about 3". It has been found that providing a quilted fabric surface improves cleaning performance of steam mop 11 when used on a variety of different stains. Quilting makes it easier to push and pull mop 11 compared to steam towels of terry material. In addition, steam towels including quilting in accordance with the invention are more durable after as many as twenty washing and drying cycles along with usage between each wash cycle.

Each fabric surface of the fabric towels are formed of two separate fabric layers. The outer layer is a woven terry of 100 percent polyester with a loop height of 3 mm of 0.72 denier yarn having a weight of 295 g/sq.m. The loops may vary from 2.5 to 3.5 mm with between 260 to 280 loops/sq. in. and the weight may vary from 280 to 310 g/sq.m.

The inner lining material has three components. These are an outer jersey layer facing the outer terry layer, padding and an inner mesh layer. The total weight of the lining materials is between 130 to 156 g/sq.m, preferably 140 g/sq.m. and between 0.065 to 0.085 inch in thickness, preferably 0.076 inch thick. The mesh has between 3 to 3.75 wales per inch and the jersey between 12 and 15 wales per inch with between 20 to 27 courses per inch, preferably 23 courses per inch.

The combined fabric layers have an overall thickness of between 0.15 to 0.17 inch, preferably 0.16 thick. The overall weight is between 435 to 485 g/sq.m., or preferably 460-461 g/sq.m. A schematic sectional showing of this fabric construction is set forth in FIG. 9. The fabric surfaces include an outside terry layer **61**, and inner lining material **62** that includes a mesh layer **63** facing outside layer **61**, a padding layer **64** and an inside jersey layer **66**. All open edges of each surface of the steam towels are stitched along the rear edge and around slots **20**, **47** and **58**.

It is desirable to seal the open edge of the steam towels **46** when installed on a steam frame to lock the pocket closed and prevent steam escape as shown in schematic in FIGS. **10a** and **10b**. One quilted surface **61** includes a first length of a hook and loop fastener **63** secured to an inside open edge **64** on both sides of slot **62**. Second quilted surface **66** with a complimentary slot **67** along open edge **68** in FIG. **10b** includes a complimentary hook and loop fastener **69** is secured to the opposed inside edge and extending beyond edge **68a**. This will allow edges **64** and **68** on each surface to abut and form a seal **71** along rear edge of frame **14** as shown in FIG. **12**.

Fabric steam towels in accordance with the invention may be formed of any suitable fabric, such as cotton or a synthetic fabric, such as polyester or polyolefin fiber. Preferably, the fabric of steam towels is a microfiber. Most preferably, the microfiber is a synthetic 100% polyester microfiber. Typical dimensions for a rectangular steam pocket are about 13 inches wide and 7 inches deep and one inch thick. To close the open edge about 4 to 5 inches of fasteners are used on each side of the slots in the rear edges.

When closure of edges **64** and **68** is complete and pocket **15** is sealed, the rear view is as shown in FIG. **11**. Hook and loop fasteners **63** and **69** are not visible when installed. It is desirable to have fabric steam pocket **15** fit snugly about frame **14** for improved distribution of steam. In order to facilitate mounting fabric pocket **15** on frame **14**, a pull ribbon **76** is attached to one side of edge opening with two strips of elastic **72** that allows a user to mount pocket **15** on one side of back edge of frame **14** and then pull on ribbon **76** to complete the installation of fabric pocket **15**. Then hook and loop fasteners are secured to seal the envelope prior to use.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above product without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes of the invention.

What is claimed:

**1.** A fabric steam pocket comprising:

first and second layers of steam-permeable fabric in the form of a pocket which is configured to be mounted to a steam frame of a steam appliance, the pocket having two opposed steam-permeable surfaces and an open section to permit mounting of the steam pocket on the steam frame;

a first fastener associated with a first peripheral edge of the first layer, the first peripheral edge bordering the open section of the pocket;

a second fastener associated with a second peripheral edge of the second layer, the second peripheral edge bordering the open section of the pocket, and the second fastener being secured to an inside surface of the second fabric layer;

the first and second fasteners being selectively securable to each other and configured such that when the pocket is mounted on the steam frame and the first and second fasteners are secured to each other, the first and second fasteners close the open section of the pocket along a length of the first and second fasteners, and the first peripheral edge of the first layer abuts the second peripheral edge of the second layer; and

each of the first and second fabric layers includes a laterally-centered fabric layer opening adjacent the open section to accommodate a connector which is configured to connect a steam frame and an appliance housing.

**2.** The fabric steam pocket of claim **1**, wherein the first fastener extends beyond the first peripheral edge of the first layer.

**3.** The fabric steam pocket of claim **1**, wherein the second fastener faces in a same direction as a direction that the inside surface of the second fabric layer faces.

**4.** The fabric steam pocket of claim **1**, wherein the first fastener and the second fastener comprise complementary hook and loop fastener material.

**5.** The fabric steam pocket of claim **1**, wherein each of the first and second fabric layers is rectangular, and the steam pocket is about thirteen inches wide, about seven inches deep, and about one inch thick.

**6.** The fabric steam pocket of claim **5**, wherein each of the first and second fasteners are about four inches in length.

**7.** The fabric steam pocket of claim **1**, wherein each of the first and second fabric layers has an outer layer comprising polyester.

**8.** The fabric steam pocket of claim **7**, wherein each of the outer layers of each of the first and second fabric layers comprises a woven terry.

**9.** The fabric steam pocket of claim **8**, wherein the first and second layers are quilted with fabric stitching.

**10.** The fabric steam pocket of claim **1**, wherein the first and second fasteners are positioned on a first lateral side of the laterally-centered fabric layer openings, and further comprising third and fourth fasteners on a second lateral side of the laterally-centered fabric layer openings, wherein the third and fourth fasteners are selectively securable to each other and configured such that when the pocket is mounted on the steam frame and the third and fourth fasteners are secured to each other, the third and fourth fasteners close the open section of the pocket and the first peripheral edge of the first layer abuts the second peripheral edge of the second layer.

**11.** The fabric steam pocket of claim **1**, wherein the laterally-centered openings included in the first and second fabric layers comprise slots in the first and second fabric layers.

**12.** The fabric steam pocket of claim **11**, wherein the slots in the first and second fabric layers comprise U-shaped slots.

13. The fabric steam pocket of claim 1, wherein when the pocket is mounted on the steam frame and the first and second fasteners are secured to each other, the first and second fasteners are not visible from the exterior of the steam pocket.

14. The fabric steam pocket of claim 1, wherein the first and second fasteners are selectively securable to each other around a rear edge of the steam frame. 5

15. The fabric steam pocket of claim 1, wherein the first and second fasteners are configured such that when the pocket is mounted on the steam frame and the first and second fasteners are secured to each other, the fasteners seal the pocket along the length of the first and second fasteners. 10

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